

REMARKS

Applicant requests reconsideration of the application in view of the foregoing amendments and the discussion that follows.

The status of the claims is as follows. Claims 41-97 were previously canceled without prejudice to Applicant's filing of divisional applications to the separately patentable subject matter thereof and claims 3, 4, 26 and 98-101 were previously canceled and claims 148-165 were added previously. Therefore, claims 1, 2, 5-25, 27-40 and 102-165 are pending.

Interview Summary

In accordance with MPEP Section 713.04, Applicant hereby provides a statement of the substance of the telephonic interview with Examiner Negin, Examiner Brusca and the undersigned on November 22, 2005. No exhibits were shown or discussed during the interview. The discussion related in general to all of the pending claims. No prior art was discussed. Examiner Negin advised the undersigned that a paragraph referring to the parent application was needed. Examiner Negin and the undersigned also discussed the need for a new oath and the undersigned responded that the present application was a continuation of a previously filed application and did not require a new oath.

In responding to the Examiner's issue regarding contiguous and non-contiguous clusters, the undersigned indicated that the specification provides sufficient disclosure to enable one of ordinary skill in the art to practice the presently claimed invention without undue experimentation for both contiguous and non-contiguous clusters. The undersigned referred in particular to pages 40-50 of the specification with regard to the above issue. Examiner Negin suggested that the claims be amended to refer to contiguous clusters. The undersigned indicated that such an amendment would unduly limit the scope of the present claims since it is Applicant's position that the specification is enabling for both contiguous clusters and non-contiguous clusters. No agreement was reached regarding the above issue.

The Amendment

The paragraph, including its corresponding heading, on page 1 after the title was amended to update priority information.

The Office Action asserts that a proper priority claim and a corresponding

amendment to the specification including such a priority claim was not made in the instant application. A copy of the "Request for a Continuing Application under 37 CFR 1.53(b)" for filing the instant application is attached hereto and marked as Exhibit A. As can be seen at the bottom of page 1, a request was made (under the heading "Relate Back – 35 USC 120") to amend the specification after the title by inserting the following heading:

"Cross Reference to Related Application(s)"

and to add the paragraph:

"This is a continuation of copending application serial number 09/021,701 filed on 02/10/98."

Also enclosed herewith is a copy of the official filing receipt (marked as Exhibit B) for the instant application. As can be seen, under the section entitled "Domestic Priority data as claimed by applicant," the following appears:

"THIS APPLICATION IS A CON OF 09/021,701 02/10/98 PAT 6,251,588"

Accordingly, there was no failure on Applicant's part to provide the appropriate amendment to the specification to include the priority data.

Rejection under 35 U.S.C. §112

Claims 1, 2, 5-25, 27-40 and 102-165 were rejected under the first paragraph of the above code section because, alleges the Office Action, the specification, while being enabling for contiguous sets of oligonucleotides in clusters, does not reasonably provide enablement for noncontiguous sets of oligonucleotides in clusters. The Office Action contends that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The Office Action contends that all of the independent claims mention the word "cluster," and the specification mentions this term continuously. However, asserts the Office Action, there is no explicit definition given for "cluster" anywhere in the disclosure.

Applicant submits that much of the present specification is directed to the definition of the word "cluster."

The Office Action refers to page 49 as containing a definition of a contiguous cluster and also recognizes that a cluster may be noncontiguous. The Office Action recognizes that the claims are enabled for a contiguous cluster but asks what is the

procedure by which one draws the conclusion that this "non-contiguous" cluster is a single cluster or several contiguous clusters in proximity?

In addition to page 49, Applicant directs attention to pages 40-50 of the specification. Page 40, for example, discusses "contiguous clusters." On page 41, lines 18-23, Applicant discusses acceptable clusters that might contain a small gap, i.e., "noncontiguous clusters." For determining an acceptable noncontiguous cluster, Applicant indicates that cluster size at some position in the sequence hybridizable or complementary to the target sequence may be defined as the number of oligonucleotides whose center nucleotides fall inside a region of length M centered about the position in question, divided by M . The specification states that this definition of clustering allows small gaps in clusters. The specification recites that, in the example used above for contiguous clusters, if M was 10, then the cluster size would step through the values $0/10, \dots, 0/10, 1/10, 2/10, 3/10, 3/10, 4/10, 4/10, 4/10, 4/10, 3/10, 2/10, 1/10, 1/10, 0/10$ as the center of the window of length 10 passed through the cluster. In each fraction, the numerator is the number of oligonucleotide sequences that have satisfied the filter set and whose central nucleotides are within a window 10 nucleotides long, centered about the nucleotide under consideration. The denominator (10) is simply the window length.

The specification continues in the last paragraph on page 41 reciting that another alternative is to define the size of a cluster at some position in the sequence hybridizable or complementary to the target sequence as the number of oligonucleotide sequences overlapping that position. This definition is equivalent to the last definition with M set equal to the oligonucleotide probe length and omission of the division by M .

In the first paragraph on the top of page 42, the specification indicates that cluster size can be approximated at each position in a nucleotide sequence by dividing the sequence into oligonucleotides, evaluating a numerical score for each oligonucleotide, and then averaging the scores in the neighborhood of each position by means of a moving window average as described above. Window averaging has the effect of reinforcing clusters of high or low values around a particular position, while canceling varying values about that position. The window average, therefore, provides a score that is sensitive to both the hybridization potential of a given oligonucleotide and the hybridization potentials of its neighbors.

Applicant submits, therefore, that, as demonstrated above, the specification is

enabling for the scope of the claims.

Huang Article

The Office Action included an article by Huang, *et al.* Applicant submits that, as demonstrated above, the specification is enabling for the scope of the claims. Applicant respectfully requests clarification of the issue raised in the paragraph of the Office Action relating to the article by Huang, *et al.* so that Applicant may respond if necessary.

Conclusion

Claims 1-2, 5-25, 27-40 and 102-165 satisfy the requirements of 35 U.S.C. §112. Allowance of the above-identified patent application, it is respectfully submitted, is in order.

Respectfully submitted,

A handwritten signature in black ink, reading "Theodore J. Leitereg". The signature is fluid and cursive, with the first and last names being more prominent.

Theodore J. Leitereg
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PATENT APPLICATION

ATTORNEY DOCKET NO. 10971464-2

IN THE
U.S. PATENT AND TRADEMARK OFFICE

Anticipated Classification of this application:

Class 435 Subclass 006

Prior application:

Examiner: Ardin H. Marschel
Art Unit: 1631

"Express Mail" label no.: EL675913918US

Date of Deposit: Feb. 15, 2001

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

By Elizabeth Miller
Typed Name: Elizabeth Miller

ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231

REQUEST FOR A CONTINUING APPLICATION UNDER 37 CFR 1.53(b)

Sir:

This is a request for filing a continuing application under 37 CFR 1.53(b) a

- ☒ continuation application of:
☐ divisional application of:

Pending Prior Application

Application Serial No. 09/021,701 filed 02/10/98

Title METHODS FOR EVALUATING OLIGONUCLEOTIDE PROBE SEQUENCES

Name of applicant(s) Karen W. Shannon, Paul K. Wolber, Glenda C. Delenstarr, Peter G. Webb,
Robert H. Kincaid

Copy of Application

- ☒ Enclosed is a copy of the prior application, including the drawings.
☐ Enclosed is a new specification, including new drawings.

Oath or Declaration

- ☒ Enclosed is a copy of the prior Declaration (37 CFR 1.63(d)).
☐ Enclosed is a newly executed Declaration (original or copy).

Foreign Priority - 35 USC 119

- ☐ Foreign priority under 35 U.S.C. 119 has been claimed in prior application Serial No. _____
filed on _____ in _____
☐ The certified copy has been filed in prior application Serial No. _____
filed _____
☐ A separate paper claiming direct priority to a foreign application is enclosed herewith. A certified copy of the foreign application will be provided in due course.

Relate Back - 35 USC 120

- ☒ Amend the specification after the title by inserting the following heading:

--Cross Reference To Related Application(s)--;
and add the paragraph:

--This is a ☒ continuation ☐ divisional
of copending application serial number 09/021,701 filed on 02/10/98.

Inventorship Statement

- () Delete the following named individuals as inventors in this application in accordance with 37 CFR 1.53(b) as a result of a change in the claimed subject matter:

Appointment of Associate Attorney

- () Recognize as Associate Attorney or Agent _____
Registration No. _____
() authorization is hereby granted by signature below of the Attorney or Agent of record
() the Associate Attorney or Agent shall not have the authority to appoint other Attorneys or Agents

Communications

- (X) Address all future communications to: Direct telephone calls to:

AGILENT TECHNOLOGIES
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Santa Clara, California 95052-8043

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Other Amendments


- () Before calculating the filing fee, amend the prior application as follows:
() Cancel the following claims _____ of the
prior application before calculating the filing fee. (At least one original independent claim must be
retained for filing purposes).
() Enter the enclosed Preliminary Amendment.

Fee Calculation

- (X) The filing fee is calculated below for (X) Utility () Design

CLAIMS AS FILED BY OTHER THAN A SMALL ENTITY				
(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) TOTALS
TOTAL CLAIMS	101 — 20	81	X \$18	\$ 1,458
INDEPENDENT CLAIMS	5 — 3	2	X \$80	\$ 160
ANY MULTIPLE DEPENDENT CLAIMS	0		\$270	\$ 0
BASIC FEE: Design (\$320.00); Utility (\$710.00)				\$ 710
TOTAL FILING FEE				\$ 2,328
				\$ 2,328

Respectfully submitted,
Karen W. Shannon et al.

By 
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DEC 14 2001



UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE
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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FILE FEE REC'D	ATTY. DOCKET NO.	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/784,674	02/15/2001	1631	2458	10871464-3	8	101	5

CONFIRMATION NO. 3167

UPDATED FILING RECEIPT



OC000000007159414

AGILENT TECHNOLOGIES
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Intellectual Property Administration
P.O. Box 58043
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Date Mailed: 12/05/2001

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

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Domestic Priority data as claimed by applicant

THIS APPLICATION IS A CON OF 09/021,701 02/10/1998 PAT 6,251,588

Foreign Applications

If Required, Foreign Filing License Granted 04/20/2001

Projected Publication Date: 03/14/2002

Non-Publication Request: No

Early Publication Request: No

Title

✓ Methods for evaluating oligonucleotide probe sequences